REMARKS

Claims 28-37 and 39-45 are pending in the application with claims 28-30 amended herein, new claims 44 and 45 added herein, and claim 38 canceled herein.

The specification is amended herein to correct a typographical error. The amendment is supported at least by original claim 21.

New claims 44 and 45 are supported at least by original claims 1-33 as well as by corresponding supportive text in the specification. New claim 44 sets forth a PVD component consisting essentially of material having a face-centered cubic crystalline structure, the material exhibiting a (200) texture over at least about 70% of a representative surface area. The material has a sufficient amount of residual stress in the component to increase magnetic pass through flux exhibited by the component during PVD compared to pass through flux exhibited without inducing the residual stress, but such induced residual stress alone is not sufficient to substantially alter surface grain appearance. Page 2-4 and 8-10 of the Office Action allege that Abburi discloses or suggests some of the limitations selected by the Applicant for inclusion in new claim 44. However, Applicant asserts that new claim 44 is patentable over Abburi.

A finding of obviousness requires disclosure or suggestion of every claim limitation. Applicant asserts that Abburi does not disclose or suggest a material having a sufficient amount of residual stress to increase magnetic pass through flux exhibited by the component during PVD compared to pass through flux exhibited without inducing the residual stress. Page 11 of the Office Action alleges that relief of work-induced strain described in column 19, lines 25-33 of Abburi is an optional step and that Abburi suggests a targ t with the claimed residual stress. However, th conclusion in th

Office Action ignores th consistent teachings by Abburi that cl arly motivat against any asymmetric cold-work characteristics.

Applicant notes that any prior art reference must be considered in its entirety, that is as a whole, including any portions that would tend not to support the position of the Office. For example, the Office Action alleges that relief of work-induced strain is an optional step in Abburi since column 19, lines 27-28 state that relief of work-induced strain is "helpful to providing good uniformity." However, such characterization by the Office ignores the discussion in column 19, lines 28-33 that Sample "C" does not meet the Abburi objective of providing good uniformity because work-induced strain was not relieved and it had asymmetries due to anisotropic working or incomplete recrystallization steps.

Further, column 19, lines 41-46 states that the Abburi "target qualification method" proscribes or otherwise removes from use targets that do not meet criteria for non-directional working. Such non-directional working is synonymous with isotropic working. Accordingly, Abburi proscribes from use targets that possess asymmetries due to anisotropic working, in other words, work-induced strain. Column 14, lines 15-32 of Abburi discuss the deficiencies of Sample "C" and lines 30-32 state that cold-rolling asymmetry probably contributed to its poor uniformity and life span results. Once again, cold-rolling asymmetry refers to work-induced strain that is not relieved. Column 15, lines 46-53 further describe that Sample "C" produced poor results because wafer deposition was consistently asymmetric, indicating the presence of asymmetric cold-working characteristics.

Thus, it is apparent that Abburi clearly teaches residual stress in a sputtering target, especially when produced from cold-working, prevents the target from obtaining the Abburi objective of good uniformity. Since Abburi must be considered as a whole, no support can be found in Abburi for the proposition that relieving work-induced strain is optional. A person of ordinary skill viewing the teachings of Abburi would clearly be motivated against intentionally providing residual stress in a PVD component. At least for such reason, Abburi cannot be considered to disclose or suggest the claimed PVD component having a sufficient amount of residual stress to increase magnetic pass through flux exhibited by the component during PVD. Regardless of whether Abburi discusses improvement of % PTF, it is clear that Abburi does not suggest achieving improved % PTF by providing the claimed sufficient amount of residual stress.

At least page 9, line 9 to page 10, line 13 of the present specification describes the importance of residual stress in obtaining the claimed beneficial reduction in pass through flux compared to pass through flux exhibited without inducing the residual stress. Such text also describes one possible technique for inducing the stress through unidirectional (that is, anisotropic) cold working. Notably, the exemplary technique described in the specification for obtaining the claimed sufficient amount of residual stress is expressly described by Abburi as unacceptable and a technique that prevents obtaining the Abburi objective of providing good uniformity. Abburi does not contain any discussion that might be considered to suggest to a person of ordinary skill that a sufficient amount of residual stress might be beneficial in improving pass through flux. Instead, Abburi motivates against any use of the exemplary method described in the present specification for obtaining the sufficient amount of residual stress. At least for

such additional reason, Abburi cannot be considered to disclose or suggest a material in a PVD component having a sufficient amount of residual stress in the component to increase magnetic pass through flux exhibited by the component during PVD.

Claim 44 further sets forth that the induced residual stress alone is not sufficient to substantially alter surface grain appearance. Page 8, line 22 to page 9, line 8 of the present specification identifies that the amount of residual stress sufficient to increase magnetic pass through flux may be sufficiently small such that the residual stress alone is not sufficient to substantially alter surface grain appearance. Thus, claim 44 identifies both a lower and an upper limit to a range for the amount of residual stress. Abburi does not in any way contemplate providing enough residual stress to increase magnet pass through flux while limiting the induced residual stress so as not to substantially alter surface grain appearance. Since Abburi does not disclose or suggest the claimed upper limit for induced residual stress, Abburi further fails to disclose or suggest every limitation of claim 44.

Applicant acknowledges the Abburi discussion in column 2, lines 55-59 of at least 35% (200) texture in a sputtering target. However, Applicant notes that the highest (200) content actually obtained by Abburi is described in Table 1 as 32.8%. Pursuant to MPEP 2131.03 when the prior art discloses a range that overlaps a claimed range but no specific examples falling within the claimed range are disclosed in the art, a case by case determination must be made as to anticipation. To anticipate the claims, the claimed subject matter must be disclosed in the art with "sufficient specificity to constitute an anticipation under the statute." In the present circumstances, claim 44 is directed to a narrow range of at least about 70% (200) texture whil the refer nce

describes a much broader range f at least 35% (200) texture. Applicant asserts that, based on the limited disclosure of Abburi discussed above and the disclosure in the present specification, evidence of unexpected results within the claimed narrow range exists.

Page 6, lines 9-24 of the present specification describe that the claimed high level of (200) texture may be obtained by unidirectional cold working. Cross-rolling or "round-to-round rolling" is detrimental to obtaining a majority (200) texture. Notably, the teachings of Abburi insist upon isotropic or non-directional working to obtain good uniformity and high % PTF. Thus, such requirement of Abburi precludes obtaining the high level of (200) texture set forth in claim 44. The surprising result of providing at least about 70% (200) texture is that inducing a sufficient amount of residual stress can nevertheless increase magnetic pass through flux.

Per the discussion on page 10, lines 4-13 of the present specification, the ability to increase pass through flux by induced residual stress is severely limited in Abburi because of the isotropic working requirement and corresponding low level of (200) texture. However, Abburi does not recognize this limitation. Accordingly, Applicant asserts that the improvement in magnetic pass through flux obtained by providing at least about 70% (200) texture, as set forth in claim 44, achieves an unexpected result that is not contemplated by Abburi. Also, a person of ordinary skill viewing the teachings of Abburi would be motivated against providing the high level of (200) texture set forth in claim 44 since it is made possible by unidirectional cold working. At least for such reason, Applicant asserts that the Abburi discussion of at least 35% (200) texture does not disclose the claimed range with sufficient specificity to constitut an

anticipation under the statute. Thus, Abburi fails to disclose or suggest every limitation of claim 44.

In keeping with the assertions above, Abburi fails to disclose a material in a PVD component with a sufficient amount of residual stress to increase magnetic pass through flux exhibited by the component during PVD. Abburi also fails to disclose such induced stress alone not being sufficient to substantially alter surface grain appearance. Abburi further fails to disclose a (200) texture over at least about 70% of a representative surface area of the material. Accordingly, claim 44 is patentable over Abburi.

As may be appreciated from the discussion above regarding the deficiencies of Abburi as applied to claim 44, new claim 45 is also patentable. Applicant acknowledges that claim 45 sets forth product-by-process limitations and that the method steps recited in such claim do not necessarily impart patentability. Instead, Applicant asserts that the method steps set forth in claim 45 produce a PVD component that possesses structural features not disclosed or suggested by Abburi.

Claims 28-43 stand rejected under 35 USC 102(e) as being anticipated by Abburi and under 35 USC 103(a) as being unpatentable over Abburi. Applicant requests reconsideration. As may be appreciated from the discussion above regarding the deficiencies of Abburi as applied to new claim 44, Abburi fails to disclose or suggest every limitation set forth in each of claims 28-37 and 39-43. Accordingly, claim 28-37 and 39-43 are patentable. Applicant requests allowance of such claims in the next Office Action.

Claims 29 and 40 stand rejected und r 35 USC 102(b) as being anticipated by Cole and under 35 USC 103(a) as being unpatentable over Cole. Applicant requests reconsideration. Claim 29 is amended herein incorporating the entire subject matter of previous claim 38 that depended from claim 29. Claim 38 was not rejected as being anticipated by or unpatentable over Cole. Accordingly, amended claim 29 is patentable over Cole. Applicant requests allowance of claim 29 in the next Office Action.

In keeping with the assertions herein, Applicant asserts that all pending claims 28-37 and 39-45 are in condition for allowance and request such allowance in the next Office Action.

Respectfully submitted,

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